

REMARKS

Claims 4-9 are currently pending. Claims 1-3 have been withdrawn. Claim 6 is canceled herein and claims 8 and 9 have been added.

Claim 5 has been noted as being ungrammatical or at least unclear at “is designed in cylindrical shape . . .” In response thereto, Applicants have restructured the claim to more readily coincide with standard claim language.

Applicants' Response to the Rejections Under 35 U.S.C. §103

Currently, claims 4-7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Andersson '695* or *Kobayashi '169* or *Adachi '915* or *Wenckus '384*.

Applicants respectfully traverse. Applicants will demonstrate herein that the invention would not have been obvious to one skilled in the art reviewing the cited references. First, Applicants have amended claim 4 to include physical characteristics of the spent nuclear fuel pyrochemical reprocessing method, particularly dependent claim 6. In addition, Applicants have added new claims 8 and 9 as (1) a limitation that the crucible is made of pyro-graphite (*see* specification, page 2, lines 2-4); and (2) a limitation that the graphite crucible acts as an anode (*see* specification, same as previous), respectively.

The present invention per dependent claim 5 relates to the handling of uranium and plutonium contained in the spent nuclear fuel. For this reason, the container is designed in a specific shape such as annular shape, planar shape, etc., in addition to a cylindrical shape in order to suppress a continuous nuclear fission reaction caused by neutrons.

The present invention per dependent claim 7 uses a cooling medium other than water, and this is to prevent phreatic explosion caused by the contact with the molten salt at high temperature.

Applicants respectfully submit that the limitation of claim 6, now amended claim 4, is not disclosed or suggested in the formation processes of the prior art.

The present invention relates to an induction heating system for a molten salt to be used in dry reprocessing of a spent nuclear fuel. The invention aims to heat a salt, which has very low conductivity and is difficult to heat by induction heating. For this reason, auxiliary heating members per amended claim 4, are arranged in the crucible in addition to the induction heating means to promote the heating of the salt.

Wenckus et al. relates to a high frequency induction heating system. *Adachi et al.* and *Kobayashi et al.* each relate to a heating system for melt processing of radioactive wastes. *Andersson et al.* and *Thomas et al.* each relate to a high frequency induction heating system for melting metal. *Wenckus et al.* does not describe the object to be heated. *Adachi et al.* relates to the heating of solid wastes. *Kobayashi et al.*, *Andersson et al.* and *Thomas et al.* each relate to the heating of metal, which has high conductivity and is easily heated by high frequency induction heating member.

Hence, none of the references teaches or suggests the limitation of amended claim 4 requiring an auxiliary heating member. One skilled in the art would not have been motivated to utilize an auxiliary heating means because the substances being melted in the references do not require the extra energy to reach the melting point. Likewise, none of these references has the facilities necessary for electrolytic processing (such as

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electrode, gas blowing pipe). Therefore, these references cannot be applied for the reprocessing of spent nuclear fuel.

Wherefore, Applicants respectfully request that in light of the amendments and accompanying remarks, the rejections based on the references be withdrawn.

For at least the foregoing reasons, it is believed that this application is now in condition for allowance. If, for any reason, it is believed that this application is not in condition for allowance, Examiner is encouraged to contact the Applicants' undersigned attorney at the telephone number below to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 50-2866.

Respectfully submitted,

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